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Abstracts

[*Sources of patent abstracts are cited if they are not from printed copies or official abridgments.*]

ORGANIC FIBERS I

BACTERIAL CELLULOSE. Fibrillar structure of cellulose of bacterial and animal origin. M. Aschner & S. Hestrin, Hebrew Univ. *Nature 157,* 659 (May 18, 1946).

Microscopic fibrils seen in cellulose formed by *Acetobacter xylinum* are apparently true cellulose fibrils, not bacterial cell hairs. Mechanics of fibril formation might be studied with this cellulose. TTD:8-46.

EFFECT OF HEAT on wool, cotton and nylon. A. O. Lloyd, Porrits and Spencer, Ltd. *Nature 157,* 735-6 (June 1, 1946).

Heating wool, cotton and nylon fibers 1-142 hrs. at 150°F causes increased acidity and electrical conductivity. In nylon the effect is fully reached in about 12 hrs. but in wool and cotton the change continues even after 142 hrs. TTD:8-46.

SCHONBEIN'S NITROCELLULOSE. Chemistry & Industry 1946, 177 (May 4, 1946).

An editorial on the discovery of nitrocellulose a century ago by Schönbein. TTD:8-46.

Cotton I 1 a

COTTON must find way to increase consumption. Anon. *Am. Wool Cotton Reptr. 60,* No. 20, 81, 83, 85, 87, 89, 94-6 (May 16, 1946).

Increased uses for cotton are urged as important in its future. Expanded industrial uses may be an important outlet. TTD:8-46.

COTTON FIBER. Dielectric properties of raw cotton. W. Lawrence Balls, Cotton Research Board (Egypt). *Nature 158,* 9-11 (July 6, 1946).

Measurements of dielectric constant K of cotton fibers were made along the fiber length as well as transversely. The value of K is about 6 lengthwise and 3 crosswise. The electrical anisotropy thus revealed may be significant also for other fibrous materials such as wood. TTD:8-46.

COTTON SELECTION. Better selection of cotton. John T. Wigington. *Textile Bull. 70,* No. 6, 28, 30, 32, 34 (May 15, 1946).

A round table discussion on cotton classing, called an art not a science. TTD:8-46.

NEW USES FOR COTTON. Many new and expanded uses of cotton and fabrics. Anon. *Am. Wool Cotton Reptr. 60,* No. 20, 29, 31, 33 (May 16, 1946).

Plastic prefabricated building material, insulation, unwoven fabrics, and plastic coated cotton fabrics are among many new uses noted. TTD:8-46.

TOMORROW'S TEXTILES. Anon. *Oil, Paint & Drug Reptr. 149,* No. 22, 36 (June 3, 1946).

An editorial considers the threat to cotton of synthetic fibers, viewing the further expansion of cotton with some pessimism. TTD:8-46.

COTTON CONTEST, 1945, FOR BETTER YIELD AND STAPLE VALUE. H. G. Boilston, Clemson Agricultural College, Clemson, S. C.; Circular 278; 1946; 30 pp. TTD:8-46.

FACTORS RELATING TO PROSPECTS FOR EXPORTING U. S. COTTON TO GERMANY (WITH LIMITED INFORMATION ON ITALY AND SWITZERLAND). Field Information Agency, Technical, Report No. 347; price 4s 2d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

FRUITING AND SHEDDING OF COTTON IN RELATION TO LIGHT AND OTHER LIMITED FACTORS. A. A. Dunlap, Agricultural Expt. Station, College Station, Texas; Bulletin 677; 1945; 104 pp. TTD:8-46.

Flax I 1 b

FLAX. What is acceptable length for scutched fiber? W. L. Greenhill, Flax Research Laboratory. *Fibres, Fabrics & Cordage 13,* 234 (June, 1946).

Spinners prefer a fiber length of about 30", although minimum and maximum lengths range between 18 & 36". TTD:8-46.

RETTING. Microbiology of retting. Anon. *Nature 157,* 829-30 (June 22, 1946).

Spinnability and quality of linen yarns depend in part on proper control of retting. Continuous aeration during retting is helpful. Bibliography (14 references). TTD:8-46.

PROCESSING OF DOMESTIC FLAX FOR TEXTILE USE. I. DECORTICATION. J. L. Taylor. Bulletin No. 9,

State Eng. Expt. Station, Ga. School of Technology; Atlanta, 1946; 28 pp.; price 75¢.
TTD:8-46.

Minor fibers — I 1 c

RAMIE. Florida's new ramie industry. Anon. *Cord Age Mag. 46,* No. 2, 8, 33 (Aug. 1946).

The production of ramie in Florida's Everglades is promising, particularly because of its contemplated use in marine cordage. TTD:8-46.

RAMIE. Fruitless century with ramie? Anon. *Fibres 7,* 167 (June, 1946).

A brief critical note on Dall's article (see p. 155 TTD:4-46). TTD:8-46.

Bast fibers — I 1 d

DUM. Anon. *Fibres 7,* 156 (June, 1946).

A brief note on one of the lesser known fibers, found in Eritrea. The source of this fiber is the dum (also down, doom, and doum) palm; it varies in length from 0.50 to 3.6 mm. TTD:8-46.

FIBER DEFORMATION. Cell wall deformations in wood fibers. H. E. Dadswell & A. B. Wardrop, Council for Scientific and Industrial Research (Australia). *Nature 158,* 174-5 (Aug. 3, 1946).

Comparison of compression failures in eucalyptus wood with dislocation marks in jute fibers shows a morphological similarity. The slip planes in the compression test pieces of eucalyptus wood cause a change in reactivity of the wood to acetylating agents.
TTD:8-46.

JUTE CELLULOSE. Hydrated cellulose from jute fiber. S. C. Sirkar & N. N. Saha, Univ. of Calcutta. *Nature 157,* 839 (June 22, 1946).

The physical properties of hydrated jute cellulose are similar to those of coarse wool. Hydration is effected by soaking raw jute fiber 30 min. in 30% NaOH, washing 10 min. at 35°C, and air-drying 3 days. Other hydration conditions may lead to quite different properties. TTD:8-46.

JUTE FIBER. Effect of dyeing, mercerizing and intensively delignifying jute fibers on their structure. N. G. Banerjee, B. S. Basak & R. K. Sen, Indian Ass'n. for the Cultivation of Science. *Nature 158,* 100 (July 20, 1946).

Part of the lignin in jute helps to hold a parallel alignment of the cellulose crystallites and is much more resistant to delignifying chemicals than is the remainder of the lignin. TTD:8-46.

RAFFIA. Anon. *Fibres 7,* 164-6 (June, 1946).

The growing and cutting of raffia (largely to be found in Madagascar) is briefly described and illustrated. It cannot be spun but must be joined together end to end by comb or other methods. TTD:8-46.

SISAL. Steady progress over half century seen in East African sisal industry. Anon. *Cord Age Mag. 46,* No. 2, 10, 33 (Aug. 1946).

The development of sisal in East Africa is briefly reviewed. TTD:8-46.

Animal fibers — I 2

ANIMAL FIBERS. Microstructure of animal fibers. J. L. Stoves. *Fibres 7,* 151-4 (June, 1946).

The procedure used for the microscopic examination of animal fibers is described, with 6 photomicrographs of animal hairs. TTD:8-46.

FELTING WOOL. Chemical treatment of wool which increases its rate of felting. Martin R. Freney & P. Harris, Australian Wool Realization Commission. *Nature 157,* 664 (May 18, 1946).

Wool which has been treated with benzoyl chloride in petroleum ether felts faster than untreated wool. Acetyl chloride has only a slight effect.
TTD:8-46.

PULLING WOOL by use of enzymes. Anon. *Am. Dyestuff Reptr. 35,* 257-8 (May 20, 1946).

Removal of wool from pelts without damage to fibers or hides is efficiently accomplished by an enzyme, Arazym NSL (Rohm & Haas). Preparation of the enzyme is briefly described. The wool pulled by this process is superior in handle and contains no bothersome chemicals. TTD:8-46.

WOOL. Frictional properties of wool. Helen M. S. Thomson & J. B. Speakman, Univ. of Leeds. *Nature 157,* 804 (June 15, 1946).

Wool fibers were exposed to silver or gold vapor to deposit films 0.03 to 0.056 micron thick. The frictional behavior of the metallized fibers, as compared with that of untreated fibers, indicates that the peculiar frictional behavior of wool is due to the ratchet effect of the scales. TTD:8-46.

WOOL STRUCTURE. Structure of the cuticle of wool. E. H. Mercer & A. L. G. Rees, Council for Scientific and Industrial Research (Australia). *Nature 157,* 589-90 (May 4, 1946).

Electron microscopy of wool cuticle cells, studied in comparison with chemical and enzymatic tests, shows 2 layers. The outer layer is hydrolyzable by tryptic digestion, leaving an inner tryptase-inert layer having a pitted surface. Tryptase also removes an intercellular cement so that the wool fiber disintegrates.
TTD:8-46.

WOOL LUBRICANT. H. Dodd (to I. C. I., Ltd.). Brit. P. 574 828. *Textile Mfr. 72,* 280 (May, 1946).

A lubricant for application to wool fibers prior to combing, spinning, etc., which is as readily removed by scouring as olive oil, consists of a chlorinated hydrocarbon containing at least 16 C atoms, or a mixture of chlorinated hydrocarbons and an aliphatic acid or alcohol. In 1 example an oil consists of 95 wt. %

chlorinated parafin wax, containing 28% Cl, and 5% oleic acid. TTD:8-46.

Artificial fibers — I 3

CASEIN. R. Signer. Brit. P. 573 888. *Textile Mfr. 72,* 222 (Apr. 1946).

Preparatory to dry-spinning milk casein, a spinning mass of about 25% casein with a pH about 9 is subjected, before deaeration, to homogenization in a drum mill. TTD:8-46.

REGENERATED FIBERS from natural polymers. D. Entwistle, Courtaulds, Ltd. *Textile Mfr. 72,* 267 (May, 1946); *Fibres 7,* 161-2; *Silk & Rayon 20,* 744 (June, 1946).

Summary of a lecture. TTD:8-46.

Cellulosic rayons — I 3 a

RAYON. Observations of rayon weaving and throwing industry in Germany. E. C. Geier, Duplan Corp. *Rayon Textile Monthly 27,* 185-8, 238-40, 293-4 (Apr., May, June, 1946).

A review of the German rayon industry in which it is pointed out that with its energies for many years directed towards war, Germany has fallen far behind the U. S. A. in technological textile developments.
HAM TTD:8-46.

RAYON INDUSTRY OF JAPAN. H. Wickliffe Rose, Am. Viscose Corp. *Can. Textile J. 63,* No. 11, 34, 37 (May 31, 1946).

A survey of Japan's productive capacity.
TTD:8-46.

RAYON PULP. Pioneering in wood pulp. Anon. *Southern Pulp & Paper J. 9,* No. 8, 13-14, 53 (Aug. 1946); reprinted from Annual Report (1946) of Rayonier, Inc.; editorial comment, p. 11.

Manufacture of pulp suitable for rayon, tire cord and Cellophane from Southern pine has been successfully achieved at the Fernandina (Florida) mill of Rayonier. The process is described and illustrated.
TTD:8-46.

RAYON STRUCTURE. Edwin L. Lovell & O. Goldschmid, Rayonier, Inc. *Ind. Eng. Chem. 38,* 811-17 (Aug. 1946).

The effect of stretching on the crystallinity of regenerated cellulose filaments has been investigated by applying a simplified form of the accessibility determination originated by Nickerson. Rayon crystallinity is determined primarily by the process of coagulation and regeneration, the effect of stretching or of original cellulose crystallinity being small. These conclusions are supported by photomicrographs of etch figures of rayon, which reveal that stretching orients the crystalline parts present even in completely unstretched filaments.
WPU, Jr. TTD:8-46.

SYNTHETIC FIBERS. Dyer's notes. *Dyer 95,* 512, 515, 517 (May 24, 1946).

In discussing acetate rayon crepe fabrics it is noted that a proportion of cellulosic yarns is necessary. Stretching of the acetate rayon before twisting is discussed, particularly with reference to the hot soap liquor treatment used in creping operations.
TTD:8-46.

SPINNERET. Robt. J. Taylor & Wesley L. Webb (to Am. Viscose Corp.). USP 2 398 729, Apr. 16, 1946.

A spinneret for extruding filaments (e. g. of viscose) of different kinds, sizes, compositions, has 2 or more groups of openings fed by separate channels.
TTD:8-46.

ARTIFICIAL THREAD SPINNING. Rupert S. Jones (to Courtaulds, Ltd.). USP 2 402 409, June 18, 1946.

Wet-spun artificial thread is led from the spinning bath through a reciprocating funnel and collected in a centrifugal spinning box, the funnel being loosely suspended so that its end is maintained exactly in the line of axis of the box. TTD:8-46.

DIGESTING FIBERS. F. G. L. Becker (to G. Raimondo) Brit. P. 574 310. *Textile Mfr. 72,* 278 (May, 1946).

Fibers are fed into the lower end of an inclined trough in a digestion tower, treated with liquid as they are passed over grids in the bottom of the trough and then discharged at the upper end while the excess treating liquid passing through the grid is collected for reuse.
TTD:8-46.

GENERAL DEVELOPMENTS IN GERMAN STAPLE FIBER INDUSTRY AT I. G. FARBEN INDUSTRIE, HOCHST, WOLFEN, MUNCHEN, VEREINIGTE GLANZSTOFF, OBERNBURG, WUPPERTAL, PHRIX KONZERN, KREFELD, SIEGBURG ZELLWOLLE UND KUNSTSEIDE, SCHWARZA, LENZING. Field Information Agency, Technical, Report No. 50; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

PREPARATION OF CUPRAMMONIUM SPINNING SOLUTION, PRODUCTION OF CUPRAMMONIUM STAPLE AND SPECIALTIES, RECOVERY OF COPPER AND AMMONIA AT I. G. FARBEN INDUSTRIE, DORMAGEN. Field Information Agency, Technical, Report No. 34; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

SULFATE DISSOLVING PULP FOR RAYON MANUFACTURE: KOSTHEIM, OBERNBURG, DARMSTADT. Field Information Agency, Technical, Report No. 56; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

VISCOSE CONTINUOUS AND RAYON STAPLE FIBER PLANTS OF BRITISH, AMERICAN, AND FRENCH OCCUPATION ZONES OF GERMANY. Brit. Intelligence Objectives Subcommittee Report No. 290; price 30s 7d.

Listed in *Govt. Publications* (*Great Britain*) (Apr. 1946). TTD:8-46.

Protein fibers — I 3 b

FIBROUS PROTEINS. Dyers and colorists discuss fibrous proteins. Anon. *Silk & Rayon 20,* 663-4 (June, 1946).

A symposium held at Leeds University is reviewed. TTD:8-46.

PROTEIN FIBERS. Frederick K. Watson (E. I. duPont de Nemours & Co.). USP 2 399 084, Apr. 23, 1946.

Protein fibers, filaments, films and coatings having greater strength and resistance to dyebaths than heretofore are produced from an aqueous solution of a water-insoluble globular protein, a water-soluble salt of a polymeric carboxylic acid, and alkali (such as NaOH) to raise the pH of the solution to about 9 or 10. TTD:8-46.

PROTEIN FIBER. Francis C. Atwood (to Nat'l. Dairy Products Corp., through Atlantic Research Associates, Inc.). Can. P. 435 633, July 2, 1946.

A protein fiber is formed by treating casein with formaldehyde until it absorbs 3-4% and then further treating it at about 190-200°F with an acetic anhydride solution (tetrachloroethylene 86, acetic anhydride 10, and acetic acid 4 parts) for about 30 minutes. TTD:8-46.

Synthetic fibers — I 4

ELASTIC NYLON. Anon. *Chem. & Eng. News 24,* 1260 (May 10, 1946).

A new elastic nylon (DuPont), N-substituted polyamide, can be stretched 250-400%, compared to elongation of 15-25% in yarn found in nylon hosiery. TTD:8-46.

NYLON. Modified forms of nylon have promising new properties. Anon. *Silk & Rayon 20,* 742 (June, 1946).

A brief description of 3 British patents on methods of obtaining new type fibers. TTD:8-46.

NYLON PROCESSING. Chemical assistance for nylon processing. A. H. Preston. *Fibres 7,* 168 (June, 1946).

A brief review. TTD:8-46.

TINTING SYNTHETIC FIBERS. Frank E. Fuller. *Cotton 110,* No. 5, 63-5 (May, 1946).

The technique of tinting synthetic fibers for identification is discussed and illustrated with diagrams of a tinting device. TTD:8-46.

NYLON-RUBBER ADHESION. Jack Compton (to B. F. Goodrich Co.). USP 2 402 021, June 11, 1946.

The adhesion of nylon yarns, cords, and fabrics to rubber is greatly improved by treating the fibrous structure with a nylon solvent and further treating with a liquid, preferably water, and drying. This treatment produces a roughened surface on the nylon which adheres well to rubber, and is therefore especially useful in the manufacture of tires, belts, etc. TTD:8-46.

NYLON TYPE POLYMER. E. I. duPont de Nemours & Co. Australian P. 120 961, Sept. 23, 1943.

Synthetic linear polyamides, insoluble in alcohol and other solvents, are converted into soluble products which may be insolubilized by heating. TTD:8-46.

NYLON TYPE FILM. E. I. du Pont de Nemours & Co. Brit. P. 574 455. *Textile Mfr. 72,* 279 (May, 1946).

A transparent film is composed of a synthetic linear film or fiber polyamide with a quench index above 125 mils. TTD:8-46.

Fiber applications — I 5

ABRASIVE. Halsey W. Buell (to Carborundum Co.). USP 2 398 408, Apr. 16, 1946.

An abrasive article consists of a felted fibrous sheet material bonded together with an adhesive binder under pressure of 1000-2000 psi. TTD:8-46.

FIBER FILTER PAD. John W. Armaly. USP 2 399 158, Apr. 30, 1946.

A fibrous filter pad for use in packing feed-water boxes to remove oil and other foreign particles from water as it enters the boilers, has a filling of sisal fibers and an outer casing of linoweave mesh, preferably cotton. TTD:8-46.

FIBER BATTING. Clarence M. Clevenger & Lawrence B. Steele, Jr. (to E. I. du Pont de Nemours & Co.). USP 2 402 532, June 25, 1946.

Crinkled continuous filaments of cellulose acetate formed into masses, when impregnated with a polyvinyl butyral dissolved in butyl acetate and toluene or xylene, forms a light-weight, resilient, compression-resistant batting that is water-repellent and suited for heat and sound insulation. TTD:8-46.

FELT SUBSTITUTE. Carleton S. Francis, Jr. (to Sylvania Industrial Corp.). Can. P. 435 745, July 9, 1946.

A felt-like product (such as for insulation) is composed of a mixture of nonadhesive textile fibers and thermoplastic fibers of a Vinylite type synthetic resin having a thermal tackiness point of about 167°F. TTD:8-46.

INORGANIC FIBERS II

Mineral fibers II 1

MINERAL WOOL. Louis A. Hawthorne & Edw. R. Powell (to Johns-Manville Corp.). USP 2 398 707, Apr. 16, 1946.

Mineral fibers are produced by directing a molten stream of raw materials (rock, slag, glass mixtures, etc.), as it comes from the furnace, between a pair of grooved rotating drums. TTD:8-46.

ASBESTOS FIBER FLUFFING. Lee C. Pharo (to Johnson's Co.). USP 2 402 203, June 18, 1946.

Fibrous masses of asbestos are fed into a spiral tube or wind tunnel having a partial screened lining, where they are fluffed or fiberized under strong air pressure (about 100 psi). TTD:8-46.

Glass fiber II 2

GLASS FIBER replaces kapok in life jackets. Anon. *Fibres 7,* 160 (June, 1946).

Glass fibers are found to be an efficient substitute for kapok in life preservers. TTD:8-46.

HOSIERY AND KNIT GOODS. Anon. *Wool Record & Textile World 69,* 1065-6 (May 16, 1946).

In a discussion of hosiery, experiments with glass fiber yarns are briefly mentioned. Such yarns can be woven satisfactorily and probably can be knitted but they are 3 or 4 times the price of rayon yarns, difficult to wind, and quickly scarred and broken. TTD:8-46.

Applications II 3

LOW PRESSURE LAMINATES. Production of honeycomb cores. J. D. Lincoln, Lincoln Industries. *Modern Plastics 23,* No. 9, 127-9 (May, 1946).

A brief illustrated description of production line method for producing honeycomb cores, an essential feature of which is impregnating glass fiber cloth with a contact resin. TTD:8-46.

LOW-PRESSURE LAMINATING. A. Burness, E. G. Williams, & R. Hammond, I.C.I., Ltd. *Brit. Plastics 18,* 274a-8 (June, 1946).

A new thermosetting laminating resin, Nuron 100, is discussed, particularly with respect to glass fiber laminates. TTD:8-46.

MINERAL WOOL BATS. Erven White & Clayton A. Smucker (to Owens-Corning Fiberglas Corp.). USP 2 397 453, Mar. 26, 1946.

Mineral wool fiber bats for heat insulation, acoustical control, battery mats, etc., are formed and bound by an emulsion of partially polymerized furfuryl alcohol. TTD:8-46.

GLASS FIBER FILM. Emile V. Bitterli & Max Forrer (to Compagnie Générale d'Electricité). Can. P. 435 768, July 9, 1946.

A propeller consists of rigid molded blades composed of a binder reinforced with bundles of glass fibers. TTD:8-46.

FIBER TO YARN III

Fiber preparation III 1

CONTINENTAL CARDING—West of England venture. A. Mortimer, Marling & Evans, Ltd. *Textile Mfr. 72,* 232 (May, 1946).

An English experiment in continental carding is briefly described with particular reference to card clothing. TTD:8-46.

DRAFT APRON. Henry M. Bacon & Abraham L. Freedlander (to Dayton Rubber Mfg. Co.). USP 2 402 356, June 18, 1946.

A long draft spinning apron (such as for the Casablanca system) is made of a fiber reinforced synthetic rubber and resin composition, instead of leather as hitherto. Example: Perbunan 100, ZnO 5, S 2, Altax 1, whiting 30, mineral oil 10 parts by wt. TTD:8-46.

CARDING. John Locke (to British Cotton Industry Research Ass'n.). USP 2 403 384, July 2, 1946.

An improved cleaning action is obtained on a carding machine by better positioning of the taker-in and a coöperating collecting member. TTD:8-46.

CARDING. S. Paul & E. Kay (to Paul & Kay, Ltd.). Brit. P. 573 808. *Textile Mfr. 72,* 222 (Apr. 1946).

By means of a suction pipe with rotating nozzle, dust and fly from stripping and grinding operations during carding are collected and removed. TTD:8-46.

DRAFTING. J. J. McCann. Brit. P. 573 846. *Textile Mfr. 72,* 222 (Apr. 1946).

In spinning a continuous strand of fibers into twisted yarn the strand is moved through a draw-field, teetered (i. e. the strand is rapidly vibrated to aid drafting), and twisted on its own axis. TTD:8-46.

CARDING WOOL. A. Varga. Brit. P. 574 199. *Textile Mfr. 72,* 223 (Apr. 1946).

In carding wool a web of fibers is passed through pressure rollers whose surfaces are covered with a film of oil so that foreign particles on the fibers are thereby crushed and dissolved. TTD:8-46.

COMBING. A. Kay. Brit. P. 574 249. *Textile Mfr. 72,* 278 (May, 1946).

A safety device for a Nasmith comber prevents movement of the belt from the loose to the fast pulley or vice versa, thus controlling the action of the top combs. TTD:8-46.

FLAX SCUTCHER. G. O. Searle & R. W. Powell (to His Majesty's Flax Establishment). Brit. P. 574 403. *Textile Mfr. 72,* 279 (May, 1946).

By use of a forced air current the machine breaks or crimps flax straw preparatory to scutching or decorticating. TTD:8-46.

CARD CYLINDER COVERING. W. O. Sjogren. Brit. P. 574 499. *Textile Mfr. 72,* 279 (May, 1946).

A self contained card cylinder covering apparatus consists of a worm gear attachable to either end of the cylinder shaft and a tension device with a traversing drive. TTD:8-46.

COTTON CLEANING. Robt. S. Curley (to Saco-Lowell Shops). Can. P. 435 282, June 11, 1946.

A cotton cleaning machine consists essentially of an enclosed revolving beater and means for feeding the fibers to it. TTD:8-46.

GERMAN TEXTILE ROLL-COVERING MATERIALS. Field Information Agency, Technical, Report. No. 337; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

WOOLEN CARDS AT THOMAS SCHENFFELEN A. G. EBERSBACH (FILS), WURTTENBERG. Field Information Agency, Technical, Report No. 333; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

Spinning III 2

FLAX SPINNING. Recent developments in flax, etc., spinning frames. S. A. G. Caldwell. *Textile Mfr. 72,* 256-7 (May, 1946).

A new bobbin and yarn building design (Gillespie) for application to standard type wet-spinning frames is discussed and illustrated with 5 diagrams. TTD:8-46.

TWISTING WOOL. Use and abuse of twist. Anon. *Wool Record & Textile World 69,* 956-7 1006-7 (May 2, 9, 1946).

Determination of the amount of twist to use is discussed. TTD:8-46.

TWISTING SPINDLE. Geoffrey Curtis (to Courtaulds, Ltd.). USP 2 402 028, June 11, 1946.

An improved twisting spindle for simultaneously unwinding and twisting yarn from a yarn package (rotating at 7000 rpm or more) has a natural frequency of vibration when loaded of less than 3500 vibrations per min. TTD:8-46.

SPINNING RING. Geo. F. Albrecht. USP 2 403 255, July 2, 1946.

A self-lubricating spinning ring is of 2-piece construction, consisting of an oil reservoir and a porous traveler guide. TTD:8-46.

BOBBIN. Christopher Van Deventer (to Nat'l. Plastics, Inc.). USP 2 403 417, July 2, 1946.

A bobbin of improved wear-resistance is constructed with a plastic tip which largely prevents splintering. TTD:8-46.

SPINNING JENNY. P. P. Douglas. Australian P. 120 897, Jan. 22, 1944.

A manually rotatable spindle has a stop finger for stopping the spindle, and mounted on the spindle is a disc showing the indexes selectively through an opening. TTD:8-46.

BOBBIN SPUN YARN. C. C. Vanderhooven. Australian P. 120 946, Oct. 6, 1943.

Freshly spun synthetic yarn such as rayon, preferably 300 denier, is wound on a perforated bobbin to form a cylindrical package. TTD:8-46.

RING FRAME STOP MOTION. P. W. Forrest. Brit. P. 574 181. *Textile Mfr. 72,* 223 (Apr. 1946).

A spinning frame with pulley-driven spindle, which is released by an automatic stop motion, has a detector device to disengage the clutch ring from the pulley, thus stopping the spindle. TTD:8-46.

CELLULOSE ACETATE—GLASS YARN. Camille Dreyfus. Can. P. 435 202, June 11, 1946.

A spun yarn having improved resistance to heat is composed of staple fibers of cellulose acetate combined with curled glass fibers. TTD:8-46.

TWISTED RAYON YARN. Berkeley L. Hathorne & Robt. W. Seem (to Crepe de Chine, Inc., through Berkeley L. Hathorne). Can. P. 435 607, July 2, 1946.

A twist-set rayon yarn, showing little or no tendency to curl, kink, snarl, or fly has a twist factor of about $\frac{SE}{LT}$ 75 (twist factor is — (where S is strength, E is elongation, L is size and T is twist). TTD:8-46.

TWISTING. Arthur P. Lewis to Dominion Rubber Co., Ltd.). Can. P. 435 706, July 9, 1946. See USP 2 400 697, May 21, 1946 (p. 322, TTD:7-46).

A twister, through a rotating spindle and a floating guide, twists strands together into a ply construction, at the same time maintaining an equalized tension on all strands. TTD:8-46.

Winding III 3

RING TRAVELER. Anon. *Cotton 110,* No. 5, 73-4 (May, 1946).

The purpose, design, and care of the traveler are briefly discussed. TTD:8-46.

TRAVELER LAG & TWIST. Anon. *Can. Textile J. 63,* No. 9, 43 (May 3, 1946).

The effects of traveler lag and twist in ring spinning, as discussed in *Platt's Bulletin,* are summarized briefly. TTD:8-46.

WARP PREPARATION. Anon. *Wool Record & Textile World, 69,* 1061, 1063-4 (May 16, 1946).

The use of warp winding machines is briefly reviewed. TTD:8-46.

WINDER. Wm. J. Elvin (to Celanese Corp. of Am.). USP 2 401 725, June 11, 1946.

An improved winder for winding yarn into packages of uniform density and traverse has a directly driven idler drum, for supporting the cheese, that reduces friction and consequent broken filaments and hairy yarns. TTD:8-46.

WINDER. Howard W. Doughty, Jr. (to Foster Machine Co.). USP 2 402 739, June 25, 1946.

An improved high-speed yarn winder has a variable automatically controlled tension regulator. TTD:8-46.

THREAD REEL. Richard W. Stanley & Wm. B. Lowe (to Am. Viscose Corp.). USP 2 403 031, July 2, 1946.

A thread-advancing reel (for use e. g. in liquid treatment of yarn) is adaptable to either a cantilever or a double-end supported structure. TTD:8-46.

WINDING YARN. C. C. Vanderhooven. Australian P. 120 964, Nov. 2, 1943.

Prior to winding yarn on a cone its vibrations are damped whenever normal yarn tension is insufficient. TTD:8-46.

WINDING FRAMES. Maschinenfabrik Schärer. Brit. P. 575 009. *Textile Mfr. 72,* 280-79a (May, 1946).

A winder has an improved centrifugal type spool holder. TTD:8-46.

SILK AND RAYON WINDER. A. Davenport (to E. Scragg & Sons, Ltd.). Brit. P. 575 114. *Textile Mfr. 72,* 79a (May, 1946).

An improved up-twister winding frame for silk and rayon eliminates snarls, caused from stopping the machine, by keeping the yarn taut. TTD:8-46.

WINDER. Everett V. Lewis (to Can. Industries, Ltd.). Can. P. 435 460, June 25, 1946.

A winder simultaneously winds a number of yarns on a rotating support with 2 spaced guides and a traversing device. TTD:8-46.

WINDER. Walter Siegenthaler (to Maschinenfabrik Schärer). Can. P. 435 506, June 25, 1946.

Tubular cops are wound on a winder that has a number of spindles and a rotary feed. TTD:8-46.

BOBBIN IDENTIFICATION. Winthrop S. Warren & Walter V. Jacobson (to Universal Winding Co.). Can. P. 435 757, July 9, 1946.

An identification ticket is periodically inserted between the yarn strand and the bobbin of a winder by electromagnetic means. TTD:8-46.

Yarn processing **III 4**

SILICA INCREASES COTTON STRENGTH. Anon. *Chem. Industries 58,* 810 (May, 1946).

The tensile strength of cotton yarns is increased, and the twist decreased, up to 40%, by application to cotton sliver of a colloidal silica, Syton (Monsanto Chemical Co.), in concentrations of 1-3%. TTD:8-46.

WETTING THREAD. Alfred Burgeni & Roy L. Keown (to Clark Thread Co.). USP 2 398 516, Apr. 16, 1946.

Fibrous strands (i. e. thread such as for sewing) are impregnated or coated with a liquid finishing agent such as fusible waxes, oils, emulsions, etc., by passing the thread along a zigzag path between applicator devices. TTD:8-46.

STRETCHING THREADS. Thos. Jackson & Thos. B. Frearson (to British Celanese, Ltd.). USP 2 402 228, June 18, 1946.

Threads or filaments of cellulose acetate or other cellulose derivative are stretched in a softening medium (preferably steam), twisted, and wound. TTD:8-46.

YARN PROCESSING. Allen P. Burke & Henry Crewdson (to Am. Viscose Corp.). USP 2 402 313, June 18, 1946.

Liquid is applied to yarn (e. g. rayon) by passing the yarn through a channel into which the liquid is introduced. TTD:8-46.

YARN PROCESSING. Vasser Woolley (to Seydel-Woolley & Co.). USP 2 402 521, June 18, 1946.

Yarn packages (bobbins, cones, spools, or cops) are sprayed with a treating liquid in a chamber having a series of inclined and staggered grilles down which the yarn packages, introduced at the top, will fall by gravity and be discharged at the bottom, being sprayed with a treating liquid in the descent. TTD:8-46.

OILING YARN. Edwin A. Robinson & Arthur De Castro, USP 2 403 304; Laurence E. Rossiter & Ralph M. Beach, USP 2 403 305; (to Nat'l. Oil Products Co.); July 2, 1946.

A high-twist artificial yarn, pliable and snarl-free, that is suitable for hosiery knitting, is treated with hydrogenated oil (e. g. soy bean, fish, cotton seed, etc.) in emulsion or organic solvent (e. g. Stoddard). After treatment the yarn is heat-set. TTD:8-46.

YARN CONDITIONING. Am. Viscose Corp. Brit. P. 574 981. *Textile Mfr. 72,* 280 (May, 1946).

Yarn is given a liquid treatment by passing it through an open grooved trough containing the liquid supply. TTD:8-46.

Yarn products **III 5**

RAYON TIRE CORD. Heavy denier rayon for tire cord. Anon. *Can. Textile J. 63,* No. 11, 42 (May 31, 1946).

The use of heavy denier (up to 2200) rayon, particularly with synthetic rubber, is briefly discussed. TTD:8-46.

ROPE. Richard F. Warren, Jr., USP 2 403 317, July 2, 1946.

Rope is made of thin twisted strips of (preferably) polyvinylidene chloride. TTD:8-46.

MANUFACTURE OF RAYON TIRE YARN CORD AND FABRIC AT PIRELLI S. P. A. AZIENDA TESSILE ARTIFICIAL PIZZEGHETONE, ITALY. Field Information Agency, Technical, Report No. 31; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

Yarn applications **III 6**

FIBROUS CORD BRISTLES. John Overbeke. USP 2 401 956, June 11, 1946.

Durable fibrous bristles, for use in brushes and other products, are obtained from a braided cord having a hollow core, the cord being first impregnated in an unstretched condition, with glue or similar substance and then stretched to force a deep penetration of the glue and a tight compacting of the strands. TTD:8-46.

YARN TO FABRIC IV

Yarn preparation **IV 1**

HYDROLYSIS OF RESIN YARNS. H. Dreyfus. Brit. P. 574 014. *Textile Mfr. 72,* 222-3 (Apr. 1946).

Vinyl resin yarns are hydrolyzed in a hexyl alcohol solution containing a saponifying agent such as NaOH. Example: polyvinyl acetate yarn is immersed in a 0.2% hexyl alcohol solution containing NaOH at 25°C, the ratio of solution to yarn being 30-1. TTD:8-46.

CONDITIONING AGENT. Brit. Celanese, Ltd. Brit. P. 574 072. *Textile Mfr. 72,* 223 (Apr. 1946).

A conditioning agent for applying to fibers, filaments, yarns, etc., to assist carding, drafting, spinning, etc., consists of the reaction product of a mineral and a vegetable oil and a fatty acid with H_2SO_4, to which is added an alkali, an alkanolamine and water. TTD:8-46.

YARN PREPARATION. H. J. Hegan & E. H. Sharples (to Courtaulds, Ltd.). Brit. P. 574 182. *Textile Mfr. 72,* 223 (Apr. 1946).

Cellulosic yarns, especially viscose, particularly for use in stockings, is treated in hot water at above 100°C, dried and twist-set by steaming. Subsequent dyeing processes give level shades. TTD:8-46.

Warp sizing **IV 2**

SIZING WARP YARNS. Donald M. Martin (to Aqua-Sec. Corp.). USP 2 402 652, June 25, 1946.

Warp yarns are slashed with a permanent size (not requiring removal before dyeing, mercerizing, or bleaching) at greater speed and reduced cost by using an alkali-soluble water-insoluble cellulosic colloid such as a cellulose ether. TTD:8-46.

SIZING WARP YARNS. Jas. A. Clark (to Sylvania Industrial Corp.). USP 2 402 653, June 25, 1946.

Warp yarns arranged in the form of a weftless web are slashed with a tacky size such as an alkali-soluble water-insoluble cellulosic colloid, the yarns being separated before and after coagulating the colloid in order to prevent their adhering one to another. TTD:8-46.

Weaving **IV 3**

YARN IDENTIFICATION. Automatic chalking device for filling bobbins. Anon. *Can. Textile J. 63,* No. 11, 39 (May 31, 1946).

An automatic device (Whitin Machine Wks.) for identifying yarn (e.g. between winding and weaving), which eliminates the errors of the hand method, uses 2 oblong pieces of chalk 3″ long and 9/16″ square. TTD:8-46.

YARN FEED. Brit. Celanese, Ltd. Brit. P. 574 066. *Textile Mfr. 72,* 223 (Apr. 1946).

Yarns are fed simultaneously from a number of warp beams by positive drive. TTD:8-46.

WEAVING COLORS IN CARPETS. P. W. Robinson (to T. B. Worth & Sons, Ltd.). Brit. P. 574 277. *Textile Mfr. 72,* 278 (May 1946).

In weaving carpet on Axminster looms color selection can be varied by interchanging on the cylinder selections the positions of the Jacquard cards and thus electrically actuating selector needles. TTD:8-46.

WEFT BINDING. Sulzer Frères S. A. Brit. P. 574 714. *Textile Mfr. 72,* 280 (May, 1946).

On a gripper shuttle type loom the weft threads are tensioned during shedding until beaten up. TTD:8-46.

Looms — IV 3 a

AUTOMATIC LOOM. Smallware weaving—a new automatic loom. A. Thompson. *Textile Mfr. 72,* 241-3, 255 (May, 1946).

A new automatic loom (M. Wright & Sons) for weaving narrow fabrics is briefly described and illustrated. Over a period of 12 months, loom efficiency was shown to be between 65 and 72% at a speed of 120-150 picks per min. TTD:8-46.

LOOM MAINTENANCE. Care of healds and reeds and the loom in general. W. Middlebrook, Brocklehurst-Whiston Amalgamated, Ltd. *Textile Mfr. 72,* 230-1 (May, 1946).

In practical suggestions given to weavers for maintenance of looms, cleanliness is emphasized. TTD:8-46.

LOOM. Saint Frères S. A. Australian P. 121 403, Oct. 25, 1941.

By means of rotating cams on a circular loom a circular movement of the shuttles causes a periodic lowering of the heddle frame. TTD:8-46.

LOOM MAKING IN GERMANY AND TEXTILE MACHINERY ACCESSORIES. Brit. Intelligence Objectives Subcommittee Report No. 455; price 2s 1d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

Loom parts — IV 3 b

LOOM REEDS. Reeds influence fabric quality and total cost. Anon. *Silk & Rayon 20,* 730-1 (June, 1946).

Suggestions for cleaning and general maintenance are given. TTD:8-46.

LOOM HAND WHEEL. Jos. M. Patrick (to Crompton & Knowles Loom Wks.). USP 2 398 853, Apr. 23, 1946.

A light-weight hand wheel that does not appreciably interfere with the stopping of the loom through momentum of its rotation (as by any of the automatic stop motions) consists essentially of a thin sheet-metal material, whose outer part is secured to a hand rim. TTD:8-46.

LOOM THREAD HOLDER. Elliot A. Santon (to Crompton & Knowles Loom Wks.). USP 2 401 968, June 11, 1946.

On a weft replenishing loom a geared thread holder is driven by an electric motor and associated with it is a thread separator, for separating 2 different types of yarn (such as rayon and coarse cotton), which effectively divides the weft ends and prevents bunching. TTD:8-46.

LOOM PICKER. R. S. Nelson. Brit. P. 574 097. *Textile Mfr. 72,* 223 (Apr. 1946).

The shuttle strikes of a loom picker have depressed tips for engaging the sides only of the shuttle tips on impact instead of engaging the ends of the tips. TTD:8-46.

SHUTTLE TONGUE. J. Pilkington (to Pilkingtons, Ltd.). Brit. P. 574 308. *Textile Mfr. 72,* 278 (May, 1946).

An improved pivotal mounting for a shuttle tongue strengthens the shuttle body and gives rigidity to the tongue. TTD:8-46.

BOBBIN. Harald L. Amrhein & Emil E. Fuller (to Am. Paper Tube Co.). Can. P. 435 688, July 9, 1946.

A bobbin consists essentially of a tubular barrel with conical flanged end embedded in a plastic material. TTD:8-46.

Control devices — IV 3 c

ELECTRICAL STOP MOTIONS for warping machines. I. Laird. *Textile Mfr. 72,* 254-5 (May, 1946).

A Swiss electrical stop motion that is suitable for fine yarns and an American electrical stop motion for dropped heald shafts are briefly discussed and details illustrated by diagrams. TTD:8-46.

WARP STOP MOTION. P. B. Walters. Brit. P. 574 322. *Textile Mfr. 72,* 278 (May, 1946).

Through a series of metal droppers mounted on a rod near the top of the reed an electrical warp stop motion is actuated by a thread break. TTD:8-46.

LOOM STOP MOTION. J. T. Heywood & T. J. Smith. Brit. P. 574 522. *Textile Mfr. 72,* 279 (May, 1946).

An automatic stop motion stops and resets a loom after weaving a predetermined length of weft. TTD:8-46.

Fabric construction — IV 3 d

FABRIC DESIGNS. Designs for attractive furnishing fabrics. Designer. *Textile Mfr. 72,* 245-9, 257 (May, 1946).

Cloth structure and weave for such fabrics as casements, repps, cords, cretonnes, chintzes, damasks, tapestries, etc., are discussed and described with the aid of various pattern diagrams. TTD:8-46.

SPUN BLENDED GABARDINE of wool and viscose. Anon. *Am. Wool Cotton Reptr. 60,* No. 18, 11-12, 38-9 (May 2, 1946).

Wool-viscose blends made on cotton type machinery give interesting and varied fabric effects. TTD:8-46.

WOOL FABRIC. Fancy Cheviot suitings. Saxony utility tweeds. Piece dyed coatings. Wool scarves for export. Portex. *Wool Record &*

Textile World 69, 952, 954, 1009, 1011, 1117-18, 1171, 1174 (May 2, 9, 23, 30, 1946).

Various weave designs are discussed and details of pattern arrangements given. TTD:8-46.

PUCKERED FABRIC. Abraham A. Kahil. USP 2 401 828-30, June 11, 1946.

A crinkled or puckered fabric is composed of a ply of stress-free threads interwoven with a ply of loosely woven threads to which a torsional stress has been applied. In a single ply fabric a puckered effect is achieved by using a certain percentage of shrinkable threads, preferably wool or a wool mixture, which are then shrunk permanently in a fulling operation. TTD:8-46.

CAMOUFLAGE NET. David L. Swasey (to Electric Boat Co.). USP 2 402 709, June 25, 1946.

An improved type of camouflage net for land or water use, consists of strips of (preferably) lightweight cotton webbing having periodically spaced lengthwise slits through which the strips are loosely interlaced so that the strips may be moved a limited distance out of position and thus form any desired uneven, irregular pattern. TTD:8-46.

AIRCRAFT FABRIC. Vickers-Armstrongs, Ltd. Australian P. 119 063, May 21, 1943.

An airtight covering for aircraft structures is woven of stainless steel wire warp and weft threads of cotton or other textile fibers, coated with rubber latex or polyvinyl chloride. TTD:8-46.

LIGHTWEIGHT BLANKET. Botany Worsted Mills. Brit. P. 573 891. *Textile Mfr. 72,* 222 (Apr. 1946).

In manufacturing a lightweight blanket with nap on both sides, the weft is spirally wound around a core and pairs of warp threads cross and form periodic twists, between which 2 compound weft yarns pass. TTD:8-46.

RAYON TYPE SCREENING. Brit. Celanese, Ltd. Brit. P. 574 944. *Textile Mfr. 72,* 280 (May, 1946).

An open mesh fabric for screening against mosquitoes is woven of heavy denier cellulose acetate yarn, either monofil or multifilament. TTD:8-46.

Weave defects — IV 3 e

WRONG WARP ENDS in warps. P. G. Alexander. *Rayon Textile Monthly 27,* 308 (June, 1946).

To detect wrong ends in rayon warps, the inspector is advised to examine the cloth from an angle of 45°, which tends to magnify an error in either size or twist about 50%. Presence of an acetate end in a viscose warp or vice versa may be detected by a saturated solution of KI, to which is added a 7% tincture of I (the viscose rayon ends dyeing an iodine brown in acetate rayon and silk a light yellow). TTD:8-46.

Knitting — IV 4

KNITTING NARROWED GOODS. E. Dubied & Cie, S. A. Brit. P. 573 823. *Textile Mfr. 72,* 222 (Apr. 1946).

Narrowed fabrics are knit on flat knitting machines by an improved method of transfer of loops directly by the knitting needles and needle bed racking. TTD:8-46.

KNITTING STITCHES. A. Shortland (to Mellor Bromley & Co., Ltd.). Brit. P. 574 226. *Textile Mfr. 72,* 278 (May, 1946).

By manipulating the hooks or latches of needles on an independent needle knitting machine a number of novel stitch effects (such as press-off, miss, purl, etc.) may be obtained. TTD:8-46.

Knitting machines — IV 4 a

KNITTING MACHINES. Converting Model K machines. H. McVey. *Cotton 110,* No. 5, 159-60, 162 (May, 1946).

A method of making model K machines suitable for manufacturing nylon hosiery is described in some detail. Results of such a changeover are not given. TTD:8-46.

KNITTING MACHINE. Bentley Eng. Co., Ltd. Australian P. 121 083, Sept. 25, 1943.

On a knitting machine a loop transfer is effected from a lower cylinder to an upper cylinder needle by means of a cam action. TTD:8-46.

KNITTING MACHINE. H. H. Holmes, J. C. H. Heard (to Wildt & Co., Ltd.). Australian P. 121 543, Aug. 5, 1943.

On a circular links-and-links knitting machine means for outwardly deflecting certain sliders during loop transfers are provided. TTD:8-46.

KNITTING MACHINE. Wm. G. MacDonald & Wm. A. Cooper (to Wm. Cotton, Ltd.). Can. P. 435 606, July 2, 1946.

A straight bar knitting machine is equipped with an automatic welt-turning apparatus consisting of a movable welt bar and draw-off mechanism. TTD:8-46.

Knitting machine parts — IV 4 b

KNITTING MACHINE PART. Thos. S. Hayhurst (to Max Nydegger). USP 2 401 732, June 11, 1946.

On a knitting machine an improved decker point coöperates with latch needles to receive and deposit stitch loops whether the latch is opened or closed. TTD:8-46.

KNITTING YARN GUIDE. Herman Staub (to Textile Machine Wks.). USP 2 403 310, July 2, 1946.

A yarn carrier on a flat knitting machine has a rotatable guide eyelet, easily removed for replacement, that prevents yarn damage or breakage hitherto caused by grooving or scoring of the eyelets. TTD:8-46.

KNITTING YARN FEED. Bentley Eng. Co., Ltd. Australian P. 120 809, Sept. 25, 1943.

Yarn is fed to the needle hook by laying the yarn on the front of the hook while the projecting latch is closed and then adjusting the hook and yarn so that the yarn slides between the latch and hook with only a slight opening. TTD:8-46.

KNITTING NEEDLE. FNF, Ltd. Australian P. 121 133, Mar. 21, 1944.

In manufacturing tubular shank knitting needles the shank is swaged to form a pin for the straight portion and for the hook so that the need for special tubing or for brazing is avoided. TTD:8-46.

KNITTING MACHINE PART. Bentley Eng. Co., Ltd. Australian P. 121 352, June 22, 1944.

A picker on a circular knitting machine having needles with short and long butts has a laterally extended wing that is sufficient to cover the widest gap likely to occur in the distribution of long butt needles. TTD:8-46.

SHUTTLE CARRIER. K. Bullen. Australian P. 121 540, Apr. 3, 1944.

A machine has a vertical reciprocating needle bar that coöperates with a reciprocating shuttle carrier. TTD:8-46.

Control devices — IV 4 c

KNITTING STOP MOTION. Willis A. Ingalls (to Tompkins Bros. Co.). USP 2 402 816, June 25, 1946.

An automatic stop motion for a knitting machine, which is of simple construction and can be made of die castings and simple metal stampings, is actuated by thread failure or breakage or excessive thread tension. TTD:8-46.

KNITTING STOP MOTION. L. H. Colton (to I. L. Berridge & Co., Ltd.). Brit. P. 573 796. *Textile Mfr. 72,* 221-2 (Apr. 1946).

An electric stop motion for a knitting machine is actuated through radiant energy, acting upon a sensitive cell in any case of yarn failure. TTD:8-46.

Fabric construction — IV 4 d

HOSIERY KNITTING. Eugene St. Pierre (to Hemphill Co.). USP 2 402 098, June 11, 1946.

Sheer fabrics, particularly ladies' hosiery, are knit on a circular knitting machine by a multifeed knitting method in which yarns are independently fed and knit during each revolution of the needle cylinder. TTD:8-46.

HOSIERY KNITTING. Sterling C. Mack (to Julius Kayser & Co.). USP 2 402 200, June 18, 1946.

In knitting full-fashioned hosiery on flat knitting machines an improved and positive method of widening fabric and better forming of selvedge are provided. TTD:8-46.

HOSIERY KNITTING. Oscar Fregeolle (to Hemphill Co.). USP 2 402 744-5, June 25, 1946.

In knitting plated hosiery having a wrap pattern on a circular, independent needle knitting machine yarn loops of uniform size and shape are knitted by means of an improved wrap horn. TTD:8-46.

PATTERN KNIT FABRIC. Edwin Wildt, Henry H. Holmes & John C. H. Hurd (to Wildt & Co., Ltd.). USP 2 403 201, July 2, 1946.

A knit fabric with ornamental pattern effects (e. g. stripes, panels, blocks, diamonds, etc.) is produced with interconnected wrap loops or stitches and peleriine stitches. TTD:8-46.

HOSIERY KNITTING. Interwoven Stocking Co. Australian P. 117 248, Jan. 10, 1942.

A tubular knitted fabric, particularly hosiery, composed of inwardly and outwardly facing stitches differently arranged is knit on a circular knitting machine. TTD:8-46.

WOOL FABRIC COVER. Hunt & Winterbottom, Ltd. Australian P. 121 362, Mar. 2, 1944.

A self-sealing fuel tank has a protective cover of wool yarn woven into a thick felted fabric. TTD:8-46.

REENFORCED KNITTED FABRIC. W. A. Lowe & H. Allen (to Neckwear, Ltd.). Brit. P. 573 886. *Textile Mfr. 72,* 222 (Apr. 1946).

A reënforced knitted fabric is composed of front and back warps with a third made of stiffer yarn in between. TTD:8-46.

HOSIERY KNITTING. W. T. Osborne, L. T. Cook & E. G. Beasley (to Bird & Yeomans, Ltd.). Brit. P. 573 992 & 574 005. *Textile Mfr. 72,* 222 (Apr. 1946).

In knitting hosiery on a circular knitting machine having a rotating and oscillating needle bed, after the leg is fashioned the heel is produced by rotary knitting and the toe is made either as a pouch by reciprocatory knitting or as a wedge of fabric by introducing needles as the rotary knitting proceeds. TTD:8-46.

PURL STITCH KNITTING. A. Shortland (to Mellor Bromley & Co., Ltd.). Brit. P. 573 994. *Textile Mfr. 72,* 222 (Apr. 1946).

Purl stitch effects are made in the knit fabric in a sys-

tem of knitted loop transfers from selected needles in one bed to respective adjacent needles in the other bed and vice versa. TTD:8-46.

HOSIERY KNITTING. Fritz Lambach. Can. P. 435 410, June 25, 1946.

The foot and leg portions of a stocking blank are knit in a continuous unit, the heel portion being joined by interknitting with supported courses of the leg fabric. TTD:8-46.

HOSIERY KNITTING. Jos. L. Beers (to Julius Kayser & Co.). Can. P. 435 499, June 25, 1946.

A full-fashioned stocking is knit as a flat knit fabric, the heel fabric being interknitted with certain loops of the sole fabric. TTD:8-46.

Narrow fabrics — IV 6

ADHESIVE TAPE. Minnesota Mining & Mfg. Co. Australian P. 120 950, Nov. 19, 1943.

A pressure-sensitive adhesive tape, useful in holding rivets in place for riveting, has a tacky adhesive on a reënforcing fiber backing with flexible film coating and a flexible masking strip over the adhesive layer. TTD:8-46.

BELT. Dunlop Rubber Co., Ltd. Australian P. 121 509, Mar. 21, 1944.

A single ply textile fabric for belting, woven of relatively coarse yarn, weighs not less than 45 oz./sq. yd. and has a maximum of 6 weft threads per in. TTD:8-46.

Fabric processing — IV 8

PREBOARDING NYLONS. In preboarding nylons 4 factors affect length. J. C. Cobert, Fidelity Machine Co., Inc. *Knitter 10,* No. 5, 48, 50, 78 (May, 1946).

In attaining uniform length, instead of a single wet-boarding, nylon hosiery is preboarded dry. The Fidelity-Rolandé uniform hosiery control system is briefly explained with the aid of diagrams, which in addition to knitting details in the leg show structural features of the heel and toe. TTD:8-46.

SEAMS. P. G. Whitsel, Union Special Machine Co. *Natl. Canvas Goods Mfrs. Rev. 22,* No. 4, 38 (July, 1946).

A mathematical formula for calculating seam strength, along with examples, is given and briefly explained. TTD:8-46.

MARKING CLOTH. Robt. B. Robinson (to Uxbridge Worsted Co., Inc.). USP 2 398 559, Apr. 16, 1946.

A water-soluble crayon for marking yarn and cloth during the various stages of processing, the marks of which are readily removed, consists essentially of a dye, water, a color carrier, and (preferably) a phosphate salt with or without a binder (e. g. glycerin). TTD:8-46.

STENTERING FABRIC. Leslie C. Nield (to Tootal Broadhurst Lee Co., Ltd.). USP 2 402 074, June 11, 1946.

An improved cloth feed on a stenter consists essentially of a wheel or drum, preferably power driven, having a number of radially arranged pins for engaging the cloth. TTD:8-46.

NONCURLING FABRIC. Jos. F. Gifford (to United Merchants & Mfrs., Inc.). USP 2 402 621, June 25, 1946.

Fabric, particularly knitted fabric such as tricot, is steam-set to eliminate its tendency to curl or roll up at the edges, thus facilitating its further processing. In a preferred method the fabric is stretched on a tenter, thoroughly wetted, and released from tension; it is then passed over air jets, which keep it from curling, to a heated Palmer drum, where it is steamed, set, and dried. TTD:8-46.

TEXTILE ROPE-STACKING. Sydney Steele (to E. I. du Pont de Nemours & Co.). USP 2 403 311, July 2, 1946.

Ropes of textile materials are stored (e. g. between processing treatments) by an improved stacking or piling device consisting essentially of cylindrical rollers with a reversed spiral grooving, which may be slightly roughened or given a slightly tacky resin coating. TTD:8-46.

FABRIC PROCESSING. C. J. R. Ansett. Australian P. 120 875, Aug. 25, 1943.

A knitted or woven fabric resiles in being passed on a conveyor over a gauze-covered steam box. It is then dried, pressed between belts, and stacked. TTD:8-46.

SLIP-RESISTANT YARN. Soc. of Chem. Ind. in Basle. Brit. P. 574 644. *Textile Mfr. 72,* 279 (May, 1946).

Slip-resistance is imparted to the yarn in a fabric by treating the fabric with a dye-free solution of a compound R-A-CH_2-R′ wherein R is a cycloalkyl radical, A is a phenolic and R′ an isothiourea salt. TTD:8-46.

WEFT STRAIGHTENING. Leslie C. Nield (to Tootal Broadhurst Lee Co., Ltd.). Can. P. 435 655, July 2, 1946.

Fabric wefts are straightened by means of 2 pairs of nip rollers which engage the fabric selvedges. TTD:8-46.

Insulation — IV 9 a

VARNISHED CLOTH FOR ELECTRICAL INSULATION. H. W. Chatfield & J. H. Wredden, J. & A. Churchill, Ltd. London 255 pp.; price 21s.

Reviewed in *Can. Textile J. 63,* No. 10, 16-17 (May 17, 1946). TTD:8-46.

Coated products — IV 9 b

COATED FABRIC. Jos. S. Hull (Am. Pad & Textile Co.). USP 2 402 631, June 25, 1946.

Coated fabric cut in 2 similar blanks, serves as an air- and water-tight envelope in making life preservers. After thermoplastically coating both sides of the 2 fabric sheets, the edges are heat-sealed together in a bonded seam impervious to water and air by means of non-contacting radiant heat, so that the exposed faces of the finished seam are free of check marks (such as were caused previously by direct contact with heated bars). TTD:8-46.

COATED FABRIC. Imperial Chemical Industries of Australia and New Zealand, Ltd. Australian P. 121 215, Feb. 3, 1944.

An airplane fuel tank of fabric coated with synthetic rubber such as neoprene has a noncollapsible cover made of a thin vulcanized fiber sheet. TTD:8-46.

FABRIC COATING. C. Dunbar & C. D. Weston (to I. C. I., Ltd.). Brit. P. 573 834. *Textile Mfr. 72,* 222 (Apr. 1946).

A coating composition for fabrics consists of an ethylene polymer (MW about 4000) mixed with metal naphthenate (25-35 wt.%). TTD:8-46.

Laminates — IV 9 c

LAMINATES. Comparison of laminated materials. J. C. Pitzer, Formica Insulation Co. *Modern Plastics 23,* No. 9, 126 (May, 1946).

The Formica comparator chart (3 pages, folded) evaluates a wide range of laminated materials (of paper, fabric, wood, and glass) produced from a variety of resins. TTD:8-46.

LAMINATE. Laminex Proprietary, Ltd. Australian P. 115 432, Sept. 20, 1941.

A laminated material, for use in manufacturing such articles as silent gears, is composed of canvas or paper sheets impregnated with a synthetic resin, reënforced with a metal fabric of fine bronze, copper, or brass wire, and subjected to pressure and heat. TTD:8-46.

LAMINATED COVERS. Fireproof Tanks, Ltd. S. A. Australian P. 118 104, Dec. 7, 1942.

A protective cover or lining for fuel tanks is a laminated material consisting of sponge rubber between layers of woven felt with unvulcanized rubber latex coating on both sides and outer layers of textile material on each side of the woven felt. TTD: 8-46.

FABRIC COATING. S. N. Edelstein. Australian P. 121 138, Mar. 4, 1944. Cf. Brit. P. 573 767-8 (p. 336, TTD:7-46).

Cellulose or an alkali staple cellulose ether is treated with an alkali metal zincate solution to form a soluble cellulose. TTD:8-46.

CHEMICAL RAW MATERIALS — V

Plastics — V 1

UNWOVEN PLASTIC FABRIC. Fred W. Manning, Can. P. 435 310, June 18, 1946.

An unwoven fabric is spun from a plastic spinning material by directing the filaments, with the aid of a stream of liquid, as they come from the spinneret against a retaining wall in a curing chamber, where they are deposited to form an integral web of material. TTD:8-46.

INVESTIGATION OF GERMAN PLASTICS PLANTS: PART IV. ADDITIONAL INFORMATION ON THERMOSETTING RESINS AND PROCESSING OF POLYSTYRENE. Brit. Intelligence Objectives Subcommittee Report No. 433; price 8s 9d.

Listed in *Govt. Publications* (*Great Britain*) (May, 1946). TTD:8-46.

Cellulose derivatives — V 1 a

CELLULOSE ESTER PLASTIC SHEETING produced by nonsolvent continuous extrusion. Anon. *Modern Plastics 23,* No. 9, 132-6 (May, 1946).

An illustrated description of the production of Tenite (Tennessee Eastman Corp.) in widths up to 24". TTD:8-46.

CELLULOSE ETHERS and their application to cellulose fibers. Ralph T. K. Cornwell, David T. Milne & Don. S. Porter, Sylvania Industrial Corp. *Rayon Textile Monthly 27,* 318-19 (June, 1946).

In a condensation of a paper read before a meeting of the A.A.T.C.C. the effect of hydroxyethylcellulose ethers (Ceglin) as textile finishes is discussed. TTD:8-46.

ETHERS OF CELLULOSE. Anon. *Dyer 95,* 445-8, 495-7 (May 10, 24, 1946).

The use of cellulose ethers as finishing agents and as thickeners for textile printing is becoming increasingly important. An important use (in the Collоresine process) is briefly described. Some laundry-resistant finishes (e. g. Tylose 4 S) are discussed. TTD:8-46.

CELLULOSE ETHER FILM. Leon Lilienfeld. Can. P. 435 388, June 18, 1946.

A water-insoluble cellulose ether is degraded in dilute caustic alkali solutions, a thin layer of the alkaline solution being then treated in an acid coagulating bath, washed and dried. TTD:8-46.

CELLULOSIC BONDS. Robt. P. Roberts & Kenneth Jones (to Henry Dreyfus). Can. P. 435 389, June 18, 1946.

Cellulosic materials are bonded together by applying to their surfaces, and heat hardening, an aqueous solution of polyvinyl alcohol, formaldehyde, and hexamethylenetetramine. TTD:8-46.

CELLULOSE DERIVATIVES, KALLE & Co., AKTIENGESELLSCHAFT, WIESBADEN-BIEBRICH. Brit. Intelligence Objectives Subcommittee Report No. 364; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

GERMAN CASEIN PLASTICS INDUSTRY. Brit. Intelligence Objectives Subcommittee Report No. 282; price 7s 3d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

Synthetic resins — V 1 c

"SEE-THROUGH" PLASTICS that won't melt. Anon. *Modern Industry 11,* No. 6, 49-52, 54, 56, 58 (June, 1946).

An illustrated review of unsaturated polyester resins (such as Laminac, Kriston, Thalid, etc.) TTD:8-46.

SYNTHETIC RESINS. New uses for synthetic resins. Leon Moody. *Can. Textile J. 63,* No. 10, 46, 48 (May 17, 1946).

Applications of the synthetic resins in anticrease finishes and shrinkage control are briefly surveyed. TTD:8-46.

SYNTHETIC RESIN BEADS. H. & S. Freiberg. Brit. P. 573 855 & 574 149. *Textile Mfr. 72,* 222 (Apr. 1946).

Shot effects are produced on fabrics for decoration by dropping beads of hardenable synthetic resin on the fabric surface and then blowing metallic dust at an angle over these drops before they have hardened, thus giving the appearance of a continuous coating. By a similar process a reticulated or net-like effect may be obtained on fabric. TTD:8-46.

WOOL CHEMICALS. Textile chemicals. Anon. *Chem. Eng. 53,* No. 8, 145 (Aug. 1946).

Dexter Chemical Corp. announces 2 new wetting agents for wool, and a protective agent and dyeing oil for wool.
LCL TTD:8-46.

Adhesives — V 3

ADHESIVE. Minnesota Mining & Mfg. Co. Australian P. 121 327, Feb. 8, 1944.

A pressure-sensitive adhesive tape is formed from an elastomer such as methyl acrylate polymer and a small proportion of an organic cross-linking monomer such as diallyl succinate. TTD:8-46.

ADHESIVE FABRIC COVERING. W. F. Wilson (to Cellon, Ltd.). Australian P. 121 421 Jan. 20, 1944.

A fabric strip impregnated or coated with a thermoplastic adhesive (with a corrosive inhibitor such as $ZnCrO_4$ added) may be applied, by hot pressing, over the heads of rivets, screws, etc., to smooth them off. TTD:8-46.

MANUFACTURING USE OF SOME GERMAN SYNTHETIC ADHESIVES AND RAW MATERIALS. Brit. Intelligence Objectives Subcommittee Report No. 456; price 6s 2d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

Surface-active compounds — V 4

DETERGENCY—simple method of estimation. E. Kornreich. *Textile Mfr. 72,* 271-2 (May, 1946).

A method is briefly described for determining detergent action, using raw silk, without the need for any instrument. TTD:8-46.

DETERGENT. Anon. *Chem. Industries 58,* 808 (May, 1946).

Dianol G (Quaker Chemical Products Corp.) is a new synthetic detergent and wetting agent for use on wool fabrics, that dissolves instantaneously in cold water. TTD:8-46.

DETERGENTS. Surface interaction between sodium soaps and certain sodium alkylsulfates. P. A. Winsor, Bataafsche Petroleum Mij. *Nature 157,* 660 (May 18, 1946).

The secondary Na alkylsulfates are not such potent detergents as the primary compounds. Some Na soaps, e. g., Na stearate, quickly defoam secondary alkylsulfate froths in hard or even in distilled water. TTD:8-46.

VINYL RESIN. Compounding and fabrication of vinyl resin. Jas. A. Lee. *Chem. Eng. 53* No. 8, 120-4 (Aug. 1946).

The compounding and fabrication of several vinyl resins at the Bound Book, N. J. plant of Bakelite Corp., are described in detail.
LCL TTD:8-46.

CHEMICAL PROCESSING — VI

HYDROLYSIS OF CELLULOSE ACETATES. III. Study of rate of saponification of cellulose acetates. F. Howlett & Eliz. Martin, Brit. Cotton Industry Research Ass'n. *Shirley Inst. Memoirs 20,* 67-80 (Mar. 1946).

Experiments on the rate of hydrolysis of secondary cellulose acetate rayons are described and the results tabulated in 5 tables along with 7 graphs and a set of x-ray diagrams of normal and hydrolyzed acetate rayons. Hydrolysis rates of different commercial yarns and yarns varying in filament and denier are compared. Delustering cellulose acetate with soap and phenol lowers the hydrolysis rate, probably due to the swelling effect of the phenol. Secondary cellulose

acetates, while in solution, can be reduced in acetyl content from 53 to 15%. TTD:8-46.

PROCESSING WOOL GOODS. G. L. Atkinson. *Wool Record & Textile World 69,* 1120-1 (May 23, 1946).

A brief review of chemical processing. Scouring and milling are mentioned as having changed little in the past 50 years. Exact pH control, however, has changed processing from a rule-of-thumb method.

TTD:8-46.

Preparation VI 1

WOOL CONDITIONING. Wilfred N. Hadley (to Parks & Woolson Machine Co.). USP 2 401 927, June 11, 1946.

In order to moisten wool and control its moisture regain, dried wool stock is subjected on a drum to supersaturated steam and immediately thereafter to subfreezing temperatures in a deep-freeze chamber (preferably at −120°F for about 30 seconds). This conditioning machine will handle up to 100 yds. of material per minute in contrast to 18 on prior machines.

TTD:8-46.

DRYING FABRIC. I. C. I. Ltd. Brit. P. 574 341. *Textile Mfr. 72,* 278-9 (May, 1946).

Fabric is passed through perforated tubes where it is treated with a mixture of high pressure steam and air.

TTD:8-46.

Finishing VI 7

BIBLIOGRAPHIES on textile processing. II-Finishing. Anon. *J. Soc. Dyers Colourists 62,* 151-2 (May, 1946).

A select bibliography has 64 references.

TTD:8-46.

FINISHING. Future trends in textile finishing. Anon. *Can. Textile J. 63,* No. 10, 43, 45 (May 17, 1946).

A brief survey. TTD:8-46.

FINISHING FABRIC. Glen H. Morey (to Commercial Solvents Corp.). USP 2 402 767, June 25, 1946.

A soft hand is imparted to fabrics by treatment with a softener such as alkylaminoacetone oxime in aqueous solution. TTD:8-46.

CHARACTER OF SOME FINISHING AND AFTER-TREATMENT AGENTS AT I. G. FARBEN INDUSTRIE, HOCHST. Field Information Agency, Technical, Report No. 41; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

COLOR VII

DYEING AND PRINTING: a comparison. III. O. B. Charles. *Textile Bull. 70,* No. 6, 42, 44 (May 15, 1946).

Substantive naphthols for dyeing and nonsubstantive naphthols for printing are briefly discussed. Sulphur, vat, and pigment colors are compared in dyeing and printing. TTD:8-46.

REPORT TO THE WORSHIPFUL COMPANY OF CLOTH WORKERS OF THE CITY OF LONDON OF THE ADVISORY COMMITTEE ON THE DEPARTMENTS OF TEXTILE INDUSTRIES AND COLOUR CHEMISTRY AND DYEING DURING THE SESSION 1944-45. Univ. of Leeds, 1945; 32 pp. TTD:8-46.

Bleaching VII 1

BLEACHING. Studies on equilibria in bleach liquor. I Activity constant of hypochlorous acid and variation of acidity constant with ionic strength. R. W. Asmussen & L. T. Muus. *Trans. Dan. Acad. Tech. Sci. 1946* No. 1, 3-24.

In considering the physico-chemical relations in the bleaching process an investigation is made to determine the dependence of the acidity constant of HOCl on the ionic strength. The method of preparing HOCl is described and the apparatus used illustrated. The method of measurement of the acidity constant by electrometric titration, using a glass electrode, is described and titration curves given; and the results are tabulated. TTD:8-46.

BLEACHING. War time advances in continuous bleaching. Dehaven Butterworth, H. W. Butterworth & Sons Co. *Rayon Textile Monthly 27,* 320 (June, 1946); *Textile Bull. 70,* No. 6, 44, 46 (May 15, 1946).

Recent advances in textile bleaching processes are reviewed, and a comparison between the continuous and kier-boiling processes made.

HAM TTD:8-46.

BLEACHING. Continuous bleaching systems—features of automatic controls. Karl Selden, Jr., Minneapolis-Honeywell Regulator Co. *Can. Textile J. 63,* No. 10, 42 (May 17, 1946).

In a discussion of individual automatic control of each machine in a continuous bleaching range control of steam flow, washer temperature, and water flow are among the features particularly described.

TTD:8-46.

CONTINUOUS BLEACHING. Shirley Institute Process: Comparison with American methods. *Dyer 95,* 454 (May 10, 1946).

A summary of a lecture. TTD:8-46.

INTRODUCTION TO TEXTILE BLEACHING. J. J. Marsh, Chapman & Hall, Ltd., London; 512 pp.; price 32s.

Reviewed in *Wool Record & Textile World 69,* 1162 (May 30, 1946). TTD:8-46.

Dyeing VII 2

DYEING COTTON. Dyeing of direct dyes on cotton. D. R. Lemin, E. J. Vickers & T. Vickerstaff, Imperial Chemical Industries, Ltd. *J. Soc. Dyers Colourists 62,* 132-50 (May, 1946).

From measurements of the rate of dyeing of over 50 direct cotton dyes dyed on cotton in 2 liquor lengths and 3 salt concentrations, with results expressed in terms of time of half dyeing and equilibrium exhaustion, it is concluded that the data obtained on the rate of dyeing are of little practical value. Probably the rate of migration of direct dyes is of more value than the rate of dyeing. A system of classification of the direct dyes is based on the rate of migration and salt controllability. Results of the study are presented in 13 graphs and 22 tables. TTD:8-46.

RESISTS ON WOOL. Use of polymers to immunize wool against acid dyes. M. Lipson and J. B. Speakman, Univ. of Leeds. *Nature 157,* 736 (June 1, 1946).

Polymethacrylic acid can be formed in wool fibers in such a way as to resist acid dyes effectively, with scarcely any effect on feel. TTD:8-46.

YARN DYEING. Processing procedures for modern yarn dyeing. Robt. W. Joerger, Franklin Process Co. *Cotton 110,* No. 5, 76-8 (May, 1946).

Beam, jackspool, cop, and top dyeing are various forms of pressure dyeing in package form that are discussed and compared. TTD:8-46.

IMPROVED COLOR FASTNESS. Henry C. Olpin & Sydney A. Gibson (to British Celanese, Ltd.). USP 2 403 019, July 2, 1946.

The resistance of cellulose acetate materials, dyed with aminoanthraquinone dyes, to coal-gas fading is greatly improved by impregnation with a melamine resin-formaldehyde solution. TTD:8-46.

DYEING WOOL. E. I. Noble. Australian P. 121 131, Feb. 29, 1944.

Wool is dyed with acid, chrome, or metallized dyes in orthophosphoric acid, with the dye bath being maintained, preferably, at pH 2-8. TTD:8-46.

GERMAN DYESTUFFS AND INTERMEDIATES. SODIUM HYDROSULFITE, SODIUM SULFOXYLATE INDUSTRIES. Brit. Intelligence Objectives Subcommittee Report No. 271; price 2s 1d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

GERMAN TEXTILE DYEING, DRYING AND FINISHING ENGINEERS. Brit. Intelligence Objectives Subcommittee Report No. 366; price 1s 7d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

SHORT STUDY OF ULTRAMARINE BLUE. Anon. *Indian Textile J. 56,* 739-40, 746 (May, 1946).

The manufacturing process and its cost are studied. TTD:8-46.

Printing VII 3

PRINTING FABRIC. I. C. I. of Australia & New Zealand, Ltd. Australian P. 118 164, Oct. 21, 1942.

Textile fabrics are printed with a pigmented water-in-lacquer emulsion of a melamine-formaldehyde resin and (preferably) a resin plasticizer, after which the fabric is heated to volatilize the organic liquid and water and harden the resin. A preferred emulsion contains (%): 0.25-10 pigment, 15-80 organic solvent, 15-65 water, 1-15 plasticizer, and 1-15 melamine-formaldehyde resin. TTD:8-46.

PIGMENTING FABRICS. Sylvania Industrial Corp. Brit P. 574 814. *Textile Mfr. 72,* 280 (May, 1946).

In pigmenting fabric the material is treated with an alkaline or salt solution of a coagulable hydrophilic colloid, which is coagulated to form a gel, a water-soluble inorganic pigment being precipitated within the gel. Example: cotton fabric is padded with a solution of: NaOH 3 hydroxyethylcellulose 2, and water 95 wt.%. After partly drying the fabric at 45°C it is passed into a solution containing (parts by wt.): $FeCl_3$ 25, Cr fluoride 4, $CuSO_4$ 17.5, water 250 at 120°F, and HCl (95%) 1. After coagulation of the cellulose ether the fabric is treated with 5% Na_2CO_3 to precipitate in the gel and on the fabric the Fe, Cr, and Cu hydroxides. TTD:8-46.

DELUSTERING NYLON FABRIC. R. W. Hardacre (to I. C. I., Ltd.). Brit P. 574 785. *Textile Mfr. 72,* 280 (May, 1946).

Nylon fabric is locally delustered (to obtain a delustered print on a lustrous ground) with a solution of a metal inorganic salt in a lower aliphatic alcohol. Example: nylon fabric is printed with a paste containing 24 wt. parts of an ethanol-soluble rosin, 15 $CaCl_2$, and 61 ethanol. The fabric is then dried and washed twice with ethanol to remove the resin. TTD:8-46.

Color measurement VII 4

COLOR MEASUREMENT. Absorption measurements of scattering media. Bent Buchmann-Olsen. *Trans. Dan. Acad. Tech. Sci. 1946,* No. 2, 3-24.

For greater elucidation of dyeing technique a method

of spectrophotometrical measurement of light absorption by dyed and undyed textiles is described with the aid of numerous equations, graphs, and tables. Three forms of light transmission are distinguished: non-diffusive, partial diffusive, and total diffusive transmission. TTD:8-46.

LIMITATION OF COLOR. W. D. Wright, Imperial College of Science & Technology. *Rayon Textile Monthly 27,* 313-16 (June, 1946).

With the aid of 5 graphs of light reflection curves, a method of evaluating the efficiency of a dye is studied. Brightness in a color depends on 3 functions: spectral reflection curve of the surface, relative brightness of different parts of the spectrum, and the manner in which various parts of the spectrum combine to produce more or less saturated colors. TTD:8-46.

PROOFING VIII

Waterproofing VIII 1

WATER REPELLENTS. Anon. *Daily News Record No. 17263,* 24 (Sept. 3, 1946).

In 2 charts there are listed alphabetically by trade names representative water repellent finishes and plastic coatings, each trade name being followed by the manufacturer, the materials to which it may be applied, and the properties. TTD:8-46.

WATER RESISTANCE. Study of water resistance of fire, water, and weather resistant cotton canvas. Harry B. Kime, USN Industrial Test Laboratory. *Am. Dyestuff Reptr. 35,* 261-4 (May 20, 1946).

Several test procedures are outlined including a water permeability test, a hydrostatic pressure resistance test, a water absorption test, and a spray penetration test. Treated canvas is shown to have excellent water shedding properties. TTD:8-46.

WATER REPELLENT TREATMENT. David Aelony (to Monsanto Chemical Co.). USP 2 398 272, Apr. 9, 1946.

A water-repellent and mold-resistant finish is imparted to fabrics by treatment with N-alkyl amides of a phthalic acid or alkylsulfonamide derivatives of benzoic acid or of their salts such as Cu benzoate derivatives. TTD:8-46.

WATERPROOFING. Hillary Robinette, Jr. (to Commercial Solvents Corp.). USP 2 402 776, June 25, 1946.

Cellulosic material is waterproofed by impregnating with an aqueous emulsion containing 10-25% stearoxymethyl-bis(hydroxymethyl)nitromethane and then heated above 150°C. TTD:8-46.

WATER-RESISTANT TENT FABRIC. T. W. Holt. Brit. P. 574 518. *Textile Mfr. 72,* 279 (May, 1946).

A tent fabric that is water resistant but permeable to air when dry is woven of yarn impregnated with a solution of polyvinyl chloride or polyvinyl acetate and a plasticizer. After drying the yarn is woven into the fabric and calendered. TTD:8-46.

WATERPROOFING. Henry Dreyfus. Can. P. 435 538, June 25, 1946.

Cellulose acetate foils, films, etc., are heated to at least 100°C in an esterification medium containing xylene, acetic anhydride, and stearic acid. TTD:8-46.

Rotproofing VIII 3

MOLD AND TROPICAL WARFARE. G. Smith, London School of Hygiene and Tropical Medicine. *Endeavour 5,* 110-15 (July, 1946).

Wartime development of mold resistants for electrical equipment, fabrics, paper, leather, and optical equipment are discussed and a tropical testing chamber described. Shirlan (salicylanilide) is noted as a fabric protector, having had extensive use in clothing and bedding for tropical climate. TTD:8-46.

MILDEWPROOFING. Kenneth M. Gaver (to Ohio State Univ. Research Foundation). USP 2 397 732, Apr. 2, 1946.

A mildewproofing agent consists of metallic starch derivatives, particularly those of Cu and Hg, which may be obtained (in a typical example) by dissolving the metal salt in ethyl alcohol or similar solvent and adding sodium starchate, the mixture being warmed, stirred, filtered, washed with ethyl alcohol then with ether, dried and screened. TTD:8-46.

ROTPROOFED CORDAGE. Effect of weathering on rotproofed cordage. C. H. Bayley & M. W. Weatherburn, Nat'l. Research Laboratories (Canada). *Am. Dyestuff Reptr. 35,* 218, 235-6 (May 6, 1946).

Weathering tests on sisal, manila, North American hemp, and "wartime fiber" cordage treated with copper naphthenate and copper oleate (with Cu content between 0.1 and 0.5%) show that the addition of wax can reduce the otherwise substantial losses of Cu and that actinic degradation of cordage is not enhanced by the presence of these rotproofing agents. Four tables. TTD:8-46.

ROTPROOFING FABRICS. W. Baird, J. G. Evans & J. R. F. Jackson (to I. C. I., Ltd.). Brit. P. 574 408. *Textile Mfr. 72,* 279 (May, 1946).

Fabrics are rotproofed by treatment with an ammonia solution of zinc methyldithiocarbonate and dried to remove water and ammonia. TTD:8-46.

Flameproofing VIII 4

FIRE-RESISTING GARMENTS. Aluminium and fire-resisting garments. Anon. *Fibres 7,* 154 (June, 1946).

The use of aluminium as an uncoated fiber or com-

bined with cellulose acetate, is briefly noted. Aluminium foil (0.01 mm thick) calendered to a fabric gives a fire-resisting material. TTD:8-46.

Shrinkproofing — VIII 6

FIBER POLYMERS. Formation of polymers in textile fibers. M. Lipson & J. B. Speakman, Univ. of Leeds. *Nature 157,* 590 (May 4, 1946).

Felting resistance is imparted to wool fibers by polymerizing ethylene sulfide, acrylonitrile or methyl methacrylate in the fiber. Catalysts may be used; Fe is suitable for methacrylate, and H_2O_2 for acrylonitrile. TTD:8-46.

SCIENCE AIDS WOOL to meet postwar challenge. Anon. *Colorado Wool Grower 12,* No. 4, 9 (June, 1946).

Shrink-resistant finishes (particularly synthetic resins) for wool are briefly surveyed. TTD:8-46.

SHRINKAGE CONTROL. Dye staining technique for studying shrinkage control imparted to cotton by melamine resins. J. K. Dixon, N. T. Woodberry & E. A. Schuman. *Am. Dyestuff Reptr. 35,* 215-17, 236-7 (May 6, 1946).

From experiments made on 80 x 80 cotton, results of which are presented in 5 graphs and 5 tables, it is found that a correlation exists between the dye pickup and shrinkage control, or resin retention, but that it is not the same under all conditions of cure. The results should be useful in determining the most suitable procedure for dyeing resin-impregnated fabric. TTD:8-46.

TWIST IN WOOL. Martin R. Freney, K. R. Deane & J. R. Anderson, Australian Wool Realization Commission. *Nature 157,* 664 (May 18, 1946).

Shrinkproofing treatments for wool all lessen the releasing twist about 50%. Alkali methods also lessen the alternating twist by about 1/3 whereas chlorination methods do not. TTD:8-46.

WOOL SHRINKAGE. Manufacture of nonfelting wool. E. G. H. Carter, Wool Industries Research Ass'n. *Textile Mfr. 72,* 258-60 (May, 1946).

Nonfelting treatments for wool are reviewed in a lecture and the more significant processes are tabulated by inventor, method, and year of introduction. TTD:8-46.

LAUNDRYFASTNESS. E. I. du Pont de Nemours & Co. Brit. P. 573 790. *Textile Mfr. 72,* 221 (Apr. 1946).

Improved laundryfastness is imparted to dyed fabric by heating the dyed material with a monomeric poly-(N-alkoxymethyl)amide of a polybasic organic acid or with a monomeric poly-(N-alkoxymethyl)melamine, drying, and raising to an elevated temperature to fix the dye. TTD:8-46.

TESTING AND ANALYSIS — IX

CANVAS GOODS SPECIFICATIONS. Commercial standard for cotton fabric tents, tarpaulins, and covers. Anon. *Tech. News Bull. Nat'l. Bur. Standards* No. 351, 57 (July, 1946).

In a bulletin of the Bureau of Standards (CS28-46), a revision of a 1932 edition, are given canvas goods standards for marking size, weight, and type of fabric. Copies (at 5¢) may be obtained from the Superintendent of Documents, GPO, Washington, D. C. TTD:8-46.

DYNAMIC TENSILE TESTS of parachute webbing. Ambrose H. Stang, Martin Greenspan & Sanford B. Newman. *J. Research Nat'l. Bur. Standards 36,* 411-19 (Apr. 1946).

From tests on 2 types of nylon and 1 type of cotton parachute webbing to obtain data on dynamic load stretch and stretch energy, it is found that the nylon specimens showed less strength, stretch, and energy absorption capacity under dynamic loading than static loading. Under dynamic loading the cotton specimens showed about the same strength, reduced stretch, and increased energy absorption. TTD:8-46.

SIZE ON NYLON. New method for determining size on nylon. Anon. *Laboratory 16,* No. 2, 53.

A new potentiometric method of determining size on nylon (by the Fisher Titrimeter) is briefly described. TTD:8-46.

SOAP AND ACID IN COTTON. Determination of small amounts of soaps or fatty acids on cotton materials. Karroll L. Hoffdauir and Jas. H. Kettering, Southern Regional Research Laboratory. *Am. Dyestuff Reptr. 35,* 265-6 (May 20, 1946).

From investigations of kier-boiling and bleaching cotton fibers, yarns, and fabrics, an analytical method is presented for determining small quantities (100 mg. or less) of fatty acids or soaps in cotton. TTD:8-46.

TESTING of yarns and fabrics—V. N. Eyre. *Textile Mfr. 72,* 268-70 (May, 1946).

Test factors to be considered in determining serviceability are discussed. Determination of ends and picks, breaking strength tests, bursting tests, measurement of crimp, etc., are some of the factors to be noted. The Frazier machine and the Shirley crimp tester are discussed. TTD:8-46.

TESTING AND RESEARCH in wool industry. H. M. Block, U. S. Testing Co., Inc. *Colorado Wool Grower 12,* No. 4, 7-8 (June, 1946); *Chemurgic Digest 5,* 237, 239-40 (July 31, 1946).

Testing of wool for shrinkage and grade is briefly surveyed. TTD:8-46.

TESTS ON ROPE. Tests on nylon and sisal rope. Anon. *Cord Age Mag. 46,* No. 2, 14 (Aug. 1946).

Results of static and impact tests of the Nat'l. Bureau of Standards are partially tabulated, and discussed with respect to stretch behavior. Specimen ropes used were not identical in sizes so that breaking strengths are not compared. TTD:8-46.

TEXTILE INSPECTION. Use of vectographs for inspection of textiles. Harry F. Schonenfelder, QMC Inspection Service. *Fibre & Fabric 99,* No. 3198, 6-8 (May 18, 1946).

The army's work in developing vectographs (third dimensional pictures), for use as visual inspection gages to illustrate material defects, establish tolerance limits, and obtain greater uniformity in textile inspection, is discussed. The production of vectographs is based on light polarization and their use is dependent on normal vision. TTD:8-46.

THERMABILITY TESTING. Operating instructions and test procedure for AATCC thermability tester. Tentative test method. Anon. *Am. Dyestuff Reptr. 35,* 230-2 (May 6, 1946).

Detailed instructions are given for use, along with a description and illustration of the tester. TTD:8-46.

YARN TESTING. Determination of singles-twist in ply-yarns. Anon. *Jute & Canvas Rev. 17,* No. 213, 5 (June-July, 1946).

A method of calculating singles-twist, using e. g. a 2" test length, is briefly described. TTD:8-46.

TEXTILE TESTING IN GERMANY. Field Information Agency, Technical, Report No. 466; price 2s 1d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

HAZARDS XII

BOILER BLOW-OFF DANGERS. Edw. Ingham. *Dycr 95,* 471, 473, 475 (May 10, 1946).

Parallel slide valves (instead of a tap or cock) are recommended; careful cleaning is important. The blow-off fitting should be used daily. TTD:8-46.

COTTON MILL FIRE HAZARDS interrupt operations. O. F. Davenport, Factory Mutual Insurance Co. *Am. Wool Cotton Reptr. 60,* No. 18, 13-14, 40-1 (May 2, 1946); *Textile Bull. 70,* No. 5, 14, 16, 18, 20 (May 1, 1946).

With the aid of 4 charts on fire losses in mills preventive measures are suggested which emphasize routine checkups, especially with reference to electrical equipment. TTD:8-46.

PROTECTION FROM FIRE. Protecting the canvas manufacturing plant from fire. Leslie Lincoln. *Natl. Canvas Goods Mfrs. Rev. 22,* No. 4, 24-5 (July, 1946).

In a discussion of fire protection, training of responsible individuals and proper maintenance and location of adequate equipment are emphasized as important. TTD:8-46.

TEXTILE WORKERS' HEALTH and problem of medical help. Anon. *Indian Textile J. 56,* 730-2 (May, 1946).

A report (1941-45) of the medical dispensary of Simplex mills briefly discusses mill accidents and occupational diseases. TTD:8-46.

VISUAL EFFICIENCY of sewing machine operators. R. W. Bell. *Can. Textile J. 63,* No. 11, 40-1 (May 31, 1946).

Visual tests are outlined and discussed. TTD:8-46.

TEXTILE MILLS XIII

Mill buildings XIII 1

DYEHOUSE OF THE FUTURE. J. A. Crumley, Bryan Full-Fashioned Mills. *Cotton 110,* No. 5, 166, 169 (May, 1946).

Brief comments on a previous article (see p. 305, TTD:6-46). TTD:8-46.

Mill machinery XIII 2

CLEANING METHODS in cotton mills. Anon. *Am. Wool Cotton Reptr. 60,* No. 20, 91, 93, 94 (May 16, 1946).

A round table discussion at a meeting of the Eastern Carolina division of the STA. TTD:8-46.

REPORT ON GERMAN TEXTILE MACHINERY FIRMS. Brit. Intelligence Objectives Subcommittee, Report No. 289; price 1s 1d.

Listed in *Govt. Publications (Great Britain)* (Apr. 1946). TTD:8-46.

TEXTILE FINISHING MACHINERY FOR COTTON AND RAYON PIECE GOODS: INCLUDES JACQUARD MACHINES. Brit. Intelligence Objectives Subcommittee Report No. 106; price 2s 2d.

Listed in *Govt. Publications (Great Britain)* (May, 1946). TTD:8-46.

Mill power XIII 3

COAL COMBUSTION. Hints for better coal combustion. Ernest W. Fair. *Rayon Textile Monthly 27,* 323 (June, 1946).

Ten suggestions are given for more economical use of coal in firing and boiler operation. TTD:8-46.

FUEL SAVINGS in textile mills. IV, V. Efficient methods of waste prevention. W. Francis. *Tex-*

tile Mfr. 72, 189-92, 234-6, 265 (Apr., May, 1946).

Waste of fuel is traceable to 3 main causes: (1) inefficient lagging of appliances, pipes, and buildings; (2) maintained excessive temperatures in work rooms and offices; (3) lack of equipment for heat recovery wasted in flash steam, condensate, and effluents. Loss of heat by convection and radiation is discussed. TTD:8-46.

Mill Materials **XIII 4**

MATERIALS HANDLING methods in textile mills. R. M. Ashner, Werner Textile Consultants, Inc. *Am. Wool Cotton Reptr. 60,* No. 19, 13-15 (May 9, 1946).

Modernization of materials handling methods are now more than ever important in view of greatly increased labor costs. A chart compares old and new methods of picker lint handling. TTD:8-46.

Mill lighting **XIII 5**

GOOD MILL LIGHTING FIXTURES. Jas. T. Meador. *Textile Bull. 70,* No. 5, 26, 28 (May 1, 1946).

An illustrated description of dust-tight fixtures, particularly for opening and picker rooms. TTD:8-46.

Atmospheric control **XIII 6**

DUST CONTROL. Anon. Booklet of Am. Air Filter Co. 36 pp. TTD:8-46.

Process control **XIII 7**

CONTROL INSTRUMENTS and their application to textile dyeing. Walter H. Ridley, Foxboro Co. *Am. Dyestuff Reptr. 35,* 226-9 (May 6, 1946).

In a brief general discussion of control instruments the Cycle-Log is described and illustrated particularly. TTD:8-46.

FINE POINTS OF REGAIN. L. L. Lewis, Carrier Corp. *Rayon Textile Monthly 27,* 305-7 (June, 1946).

The effect of air upon hygroscopic fibers and the exact control of regain are studied with the aid of graphs on relative humidity and dry-bulb temperature. Humidity and temperature controls are all important to efficient mill operation. Bibliography: 8 references. HAM TTD:8-46.

STATIC ELECTRICITY. Textile problems on static electricity. H. E. Wenrich, *Rayon Textile Monthly 27,* 302-4 (June, 1946).

Lessening static in warping, winding, and weaving is discussed. While available for many years, static neutralizers have only recently become recognized as important by rayon textile manufacturers. Periodic cleaning and checking of neutralizers is necessary. HAM TTD:8-46.

STROBOSCOPE ENGINEERING. Uses of stroboscopic instruments in textile industry. E. Howlett. *Textile Mfr. 72,* 252-3, 255 (May, 1946).

The electronic stroboscope rapidly and accurately measures high-speed rotating and reciprocating mechanisms. The Scophony and the Whidbourne are 2 stroboscopes described and illustrated. TTD:8-46.

Water supply **XIII 8**

WATER CONDITIONING. Why and wherefore of water conditioning. Henry Miedendorp. *Rayon Textile Monthly 27,* 321-3 (June, 1946).

Water softening and filtering in textile plants, are discussed with particular reference to a Zeolite unit. TTD:8-46.

BASIC SCIENCES **XIV**

CHEMICAL NOMENCLATURE. Nomenclature, spelling, and pronunciation. Anon. *Chem. Eng. News 24,* 1233-6 (May 10, 1946).

A report of an ACS committee discussed nomenclature of silicon compounds and carotenoid pigments, noting that usage will likely be the determining factor in pronunciation. TTD:8-46.

FIBER MORPHOLOGY. Dimensional and structural changes in swollen synthetic fibers. Bruno R. Roberts, Monsanto Chem. Co. *Rayon Textile Monthly 27,* 243-5, 297-9 (May, June, 1946).

A study is made of the swelling behavior of synthetic fibers. A combination of at least 4 physical forces is present in a swollen fiber: swelling pressure, surface tension, valence forces, and diffusion forces. Some of the problems of interest to the fiber technologist are discussed: swelling of synthetic fibers in water and inorganic solvent mixtures, combined swelling and heating action, deswelling of a previously swollen fiber, hardening of a heat plasticized fiber by cooling, etc. TTD:8-46.

HYDROLYSIS OF CELLULOSE ACETATE. Heterogeneous acid and acid-salt hydrolysis of secondary cellulose acetate. Robt. N. Haward & Theodore White. *J. Soc. Chem. Industry 65,* 63-4 (Feb. 1946).

From the investigation of the hydrolysis rate it was found that a marked anionic effect occurs, with neutral salts increasing the rate of reaction, but that the lyotropic series is oppositely arranged to that found in the case of homogeneous hydrolysis. TTD:8-46.

INTRODUCTION TO EMULSIONS. Geo. M. Sutheim. Chemical Publishing Co., Inc., New York City; 1946; 260 pp.; price $4.75.

Reviewed in *Rayon Textile Monthly 27,* 333 (June, 1946). TTD:8-46.